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**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q78644

Yasunori BITO

Appln. No.: 10/720,094

Group Art Unit: 2826

Confirmation No.: 4905

Examiner: Thomas L. DICKEY

Filed: November 25, 2003

For: HETEROJUNCTION FIELD EFFECT TYPE SEMICONDUCTOR DEVICE HAVING  
HIGH GATE TURN-ON VOLTAGE AND LOW ON-RESISTANCE AND ITS  
MANUFACTURING METHOD

**INFORMATION DISCLOSURE STATEMENT**

**UNDER 37 C.F.R. §§ 1.97 and 1.98**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby  
notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached  
PTO/SB/08 A & B (modified) form and listed herein and which the Examiner may deem  
material to patentability of the claims of the above-identified application.

1. United States Patent Application Publication No. US 2001/0019131, published September 6, 2001.
2. K. Nishii et al.; "High Current/gm Self-Aligned PJ-HFET of Completely Enhancement-Mode Operation"; Extended Abstracts of the International Conference on Solid State Devices and Materials; Japan Society of Applied Physics, Tokyo, Japan; September 1998; pages 396-397.
3. Y. Bito et al.; "64% Efficiency Enhancement-Mode Power Heterojunction FET for 3.5 V Li-ION Battery Operated Personal Digital Cellular Phones"; 1998 IEEE MTT-S International Microwave Symposium Digest; IMS '98; Progress Through

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Microwaves; Baltimore, MD, June 7-12, 1998; IEEE MTT-S International Microwave Symposium Digest, New York, NY: IEEE, US, Vol. 2, June 7, 1998; pages 439-442.

4. European Patent Application Publication No. EP 0940855, published September 8, 1999.
5. Y. Bito et al., Institute of Electrical and Electronics Engineers; "Enhancement-Mode Power Heterojunction FET utilizing Re-grown P+-GaAs Gate with Negligible Off-state Leakage Current"; 2003 IEEE MTT-S International Microwave Symposium Digest; (IMS 2003); Philadelphia, PA, June 8-13, 2003; IEEE MTT-S International Microwave Symposium, New York, NY: IEEE, US, Vol. 3 of 3, June 8, 2003; pages 703-706.

One copy of each of the listed documents is submitted herewith, along with a copy of the corresponding European Search Report, dated January 18, 2005, issued in the corresponding European Patent Application.

The present Information Disclosure Statement is being filed after the later of three months from the application's filing date and the mailing date of the first Office Action on the merits, but before a Final Office Action, Notice of Allowance, or an action that otherwise closes prosecution in the application (whichever is earlier), and therefore Applicant is filing concurrently herewith a Statement Under 37 C.F.R. § 1.97(e). No fee under 37 C.F.R. § 1.17(p) is required.

The present Information Disclosure Statement is being filed thirty days or fewer from the communication from a foreign patent office and a Statement Under 37 C.F.R. § 1.704(d) is attached.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not

INFORMATION DISCLOSURE STATEMENT

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waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,



Carl J. Pellegrini  
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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: February 10, 2005



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**STATEMENT UNDER 37 C.F.R. § 1.97(e)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The undersigned hereby states, upon information and belief:

That each item of information contained in the Information Disclosure Statement filed  
concurrently herewith was first cited in any communication from a foreign patent office in a  
counterpart foreign application not more than three months prior to the filing of said Information  
Disclosure Statement.

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Substitute for Form 1449 A &amp; B/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet

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of

1

Complete if Known

Application Number	10/720,094
Confirmation Number	4905
Filing Date	November 25, 2003
First Named Inventor	Yasunori BITO
Art Unit	2826
Examiner Name	Thomas L. DICKEY
Attorney Docket Number	Q78644

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code <sup>2</sup> (if known)		
		US 2001/0019131	A1	09-06-2001	Kato et al.
		US			
		US			
		US			
		US			
		US			
		US			
		US			

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		EP	0940855	A2	09-08-1999	NEC Corporation	

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation <sup>6</sup>
		K. Nishii et al.; "High Current/gm Self-Aligned PJ-HFET of Completely Enhancement-Mode Operation"; Extended Abstracts of the International Conference on Solid State Devices and Materials; Japan Society of Applied Physics, Tokyo, Japan; September 1998; pages 396-397.	
		Y. Bito et al.; "64% Efficiency Enhancement-Mode Power Heterojunction FET for 3.5 V Li-ION Battery Operated Personal Digital Cellular Phones"; 1998 IEEE MTT-S International Microwave Symposium Digest; IMS '98; Progress Through Microwaves; Baltimore, MD, June 7-12, 1998; IEEE MTT-S International Microwave Symposium Digest, New York, NY: IEEE, US, Vol. 2, June 7, 1998; pages 439-442.	
		Y. Bito et al., Institute of Electrical and Electronics Engineers; "Enhancement-Mode Power Heterojunction FET utilizing Re-grown P+-GaAs Gate with Negligible Off-state Leakage Current"; 2003 IEEE MTT-S International Microwave Symposium Digest; (IMS 2003); Philadelphia, PA, June 8-13, 2003; IEEE MTT-S International Microwave Symposium, New York, NY: IEEE, US, Vol. 3 of 3, June 8, 2003; pages 703-706	

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov), MPEP 901.04 or in the comment box of this document. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to indicate here if English language Translation is attached.